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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,780	04/02/2004	Timothy A.M. Chuter	12730/253	9975

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PO BOX 10395
CHICAGO, IL 60610

EXAMINER

WOO, JULIAN W

ART UNIT	PAPER NUMBER
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3773

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,780	Applicant(s) CHUTER, TIMOTHY A.M.	
	Examiner Julian W. Woo	Art Unit 3773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 14-18 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 14-18 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 12, 14-18, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterjung (5,630,829) in view of Wolff et al. (4,830,003). Lauterjung discloses the invention substantially as claimed. Lauterjung discloses, at least in figures 5 and 8 and in col. 5, lines 21-25 and col. 9, lines 1-15; a stent comprising at least one limb or a limb having a cross-sectional profile in which at least one segment is flat and straight (i.e., "rectangular"), where each limb is comprised of two curved portions having opposite directions of curvature, an intermediate straight, flat mid-portion connecting the two curved portions and a short straight segment at each end, where the intermediate straight flat mid-portion is angled with respect to the short, straight segments at each end in an expanded state; where the short, straight segments at each end of the limb

Art Unit: 3773

are joined to a short, straight segment of an adjacent limb to form a point of attachment; where the short, straight segments of adjacent limbs meeting at the point of attachment are substantially parallel to one another in the expanded state (at 80), where the stent includes at least one strut or a multiplicity of struts (e.g., the wire portions at 68, 70, and 76) attached at the points of attachment, where a multiplicity of identical limbs have been joined at the short, straight segments to the short segments of adjacent limbs to form a cylindrical structure, where the stent comprises a multiplicity of wires formed in a sinusoid wave pattern, where the overall length of the stent is a multiple of the overall diameter of the cylindrical structure. However, Lauterjung does not disclose that the short, straight segments at each end of the limb are substantially identical to each other. Wolff et al. teach, at least in figures 3-5 and col. 1, lines 19-24 and col. 4, lines 18-23 and lines 55-61; and col. 6, lines 32-57; a stent including limbs (10) having short, straight segments (at 12) at each end of the limb that are substantially identical to each other. It would have been obvious to one having ordinary skill in the art at the time invention was made, in view of Wolff et al., to modify the limbs of Lauterjung, so that the short, straight segments at each end of a limb are substantially identical to each other. Such a modification would allow the stent of Lauterjung to expand into a tubular shape with uniform spacing between segments and/or limbs, while allowing the stent to exert a given, radially-outward force along the entire length of the stent without undue traumatization of a vessel wall.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterjung (5,630,829) in view of Wolff et al. (4,830,003), and further in view of Marin et

Art Unit: 3773

al. (5,397,355). Lauterjung in view of Wolff et al. discloses the invention substantially as claimed. Lauterjung in view of Wolff et al. discloses a stent with attached barbs (78).

However, Lauterjung in view of Wolff et al. does not disclose that the end of each limb is provided with a barb. Marin et al. teach, at least in figure 2, a stent with a barb (18) at the end of each limb forming the stent. It would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of Marin et al., to include a barb at the end of each limb in the stent of Lauterjung in view of Wolff et al. (4,830,003). Such a modification would improve the mechanical anchoring of the stent to the lumen of graft and/or blood vessel.

4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterjung (5,630,829) in view of in view of Wolff et al. (4,830,003) and Marin et al. (5,397,355), and further in view of Baker et al. (6,221,102). Lauterjung in view of Wolff et al. and Marin et al. discloses the invention substantially as claimed, but does not disclose that the end of each limb has been provided with a series of serrations. Baker et al. teach, at least in figure 13 and in col. 12, lines 47-65, a stent (e.g., 131) including a barb (166) including serrations (170). It would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of Baker et al., to modify the barbs on the stent of Lauterjung in view of Wolff et al. and Marin et al. to include a series of serrations. Such a modification would inhibit withdrawal of the barbs and thus allow the stent to be more firmly secured to a graft and/or blood vessel.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterjung (5,630,829) in view of Wolff et al. (4,830,003), and further in view of

Art Unit: 3773

Gianturco (5,282,824). Lauterjung in view of Wolff et al. discloses the invention substantially as claimed, but does not disclose that the end of at least one limb includes a hole. Gianturco teach, at least figures 1 and 1A and in col. 2, lines 52-59; a stent with at least one limb including a hole (at 18) at its end. It would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of Gianturco, to include a hole at the end of at least one limb in the stent of Lauterjung in view of Wolff et al. Such a modification would allow the stitching of a sleeve to stent (by the threading of suture through the holes), where the sleeve would prevent or reduce restenosis.

Response to Amendment

6. Applicant's arguments with respect to claims 12, 14-18, and 22-25, and based primarily on the Lauterjung and Wolff references, have been considered but are not persuasive. First, the Examiner agrees with the Applicant in that Lauterjung discloses members of a stent each "being curved over substantially its entire extent," where "the hoop strength of a stent has now been significantly increased by replacing the straight legs with legs which are smoothly curved along substantially the entire length." However, Lauterjung also discloses that the stent includes short, straight segments (at cusps 16 and 18), where the cusps 16 are not always required to be longer than the cusps 18. That is, col. 6, lines 7-13 and col. 9, lines 28-32 disclose that cusps 16 are longer than cusps 18 only when the stent is used as a fixation device, and that one set of cusps does not have to be longer than the other set of cusps. In other words and as suggested by figure 4, Lauterjung suggests that cusps 16 and 18 can have the same size and have short, straight segments that appear to be substantially identical to one

Art Unit: 3773

another, but Lauterjung does not explicitly disclose that the short, straight segments at the cusps are substantially identical to one another. Thus, Wolff's teachings regarding short, straight segments at cusps of a stent were applied, even though Wolff's stent presumably has a hoop strength that is relatively less than the hoop strength of Lauterjung's stent, as suggested by the teachings of Lauterjung and Applicant's arguments. Wolff teaches cusps with short, straight segments that are substantially identical one another, where such segments lead to a stent structure with uniform spacing between cusps and/or limbs, while allowing the stent to exert an even, radially-outward force along the entire length of the stent having a desired hoop strength. This teaching is applicable to the cusps and members of Lauterjung's stent, despite the curved portions of the members (which presumably produce a stent of higher hoop strength). That is, the short, straight segments of Lauterjung's stent were modified with Wolff's teachings regarding identical short, straight segments. Although Lauterjung teaches away from elongated members that have "straight legs" like Wolff's stent, Lauterjung does not teach away from cusps including short, straight segments like Wolff's stent.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 3773

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian W. Woo whose telephone number is (571) 272-4707. The examiner can normally be reached Mon.-Fri., 7:00 AM to 3:00 PM Eastern Time, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on (571) 272-4696. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Julian W. Woo/
Primary Examiner, Art Unit 3773